

FIG.\_1A

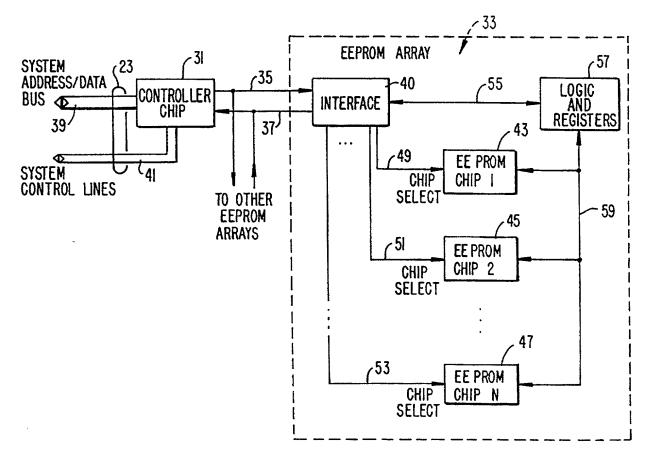
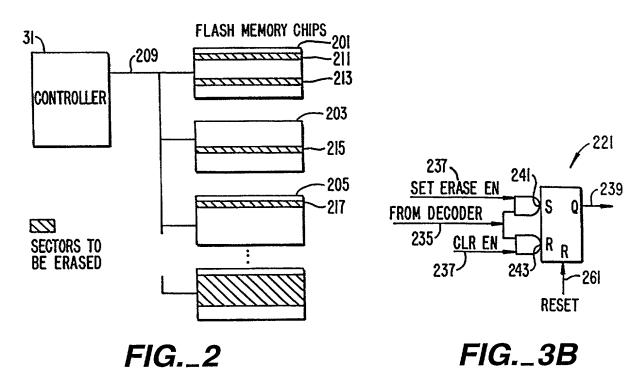


FIG.\_1B

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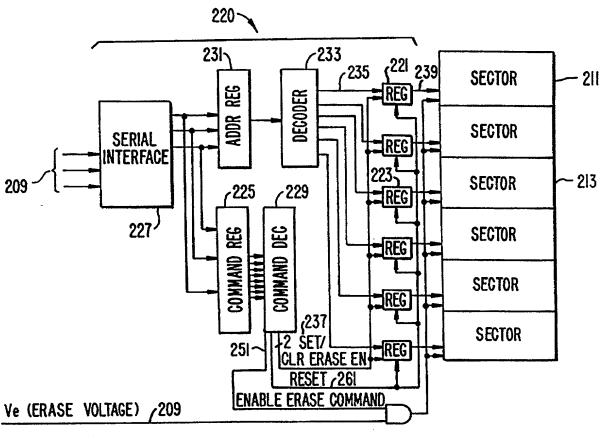
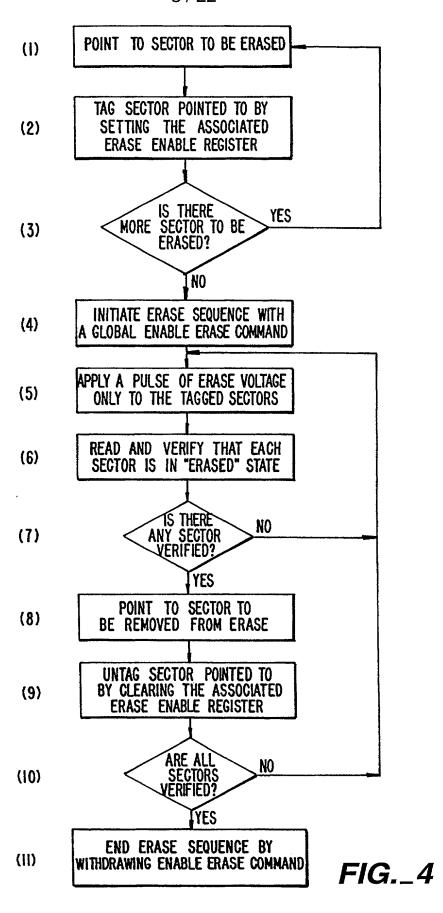
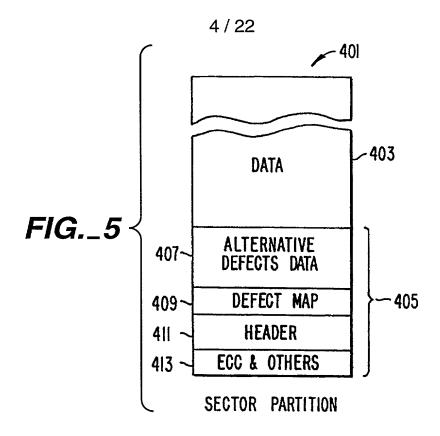


FIG.\_3A





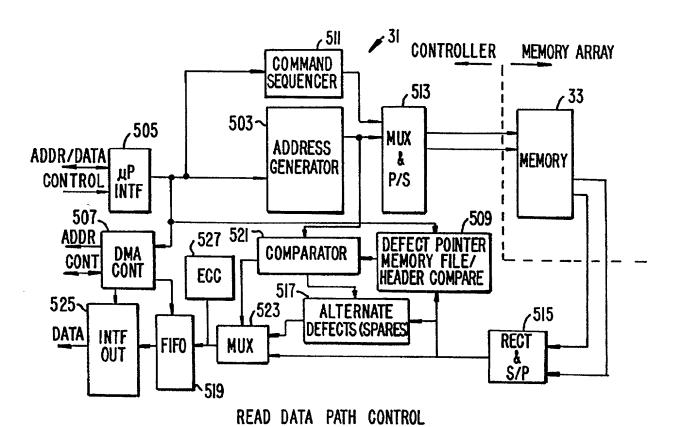


FIG.\_6

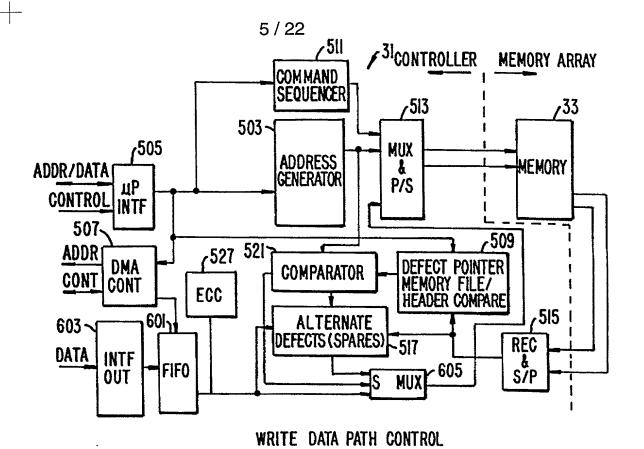
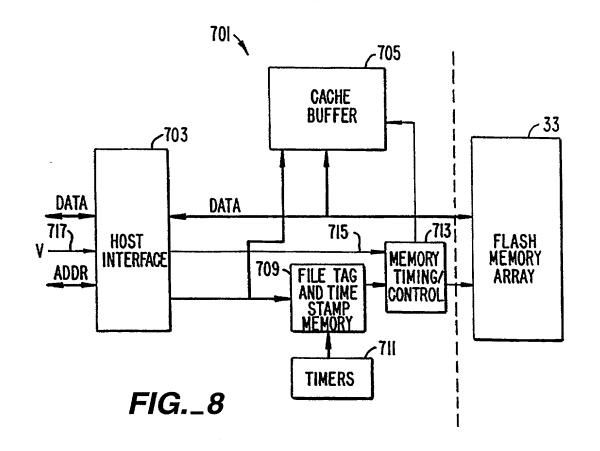
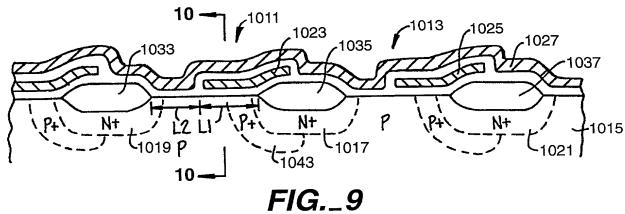
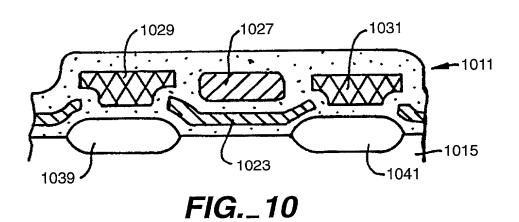


FIG.\_7







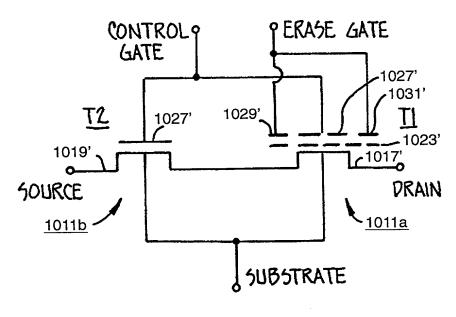
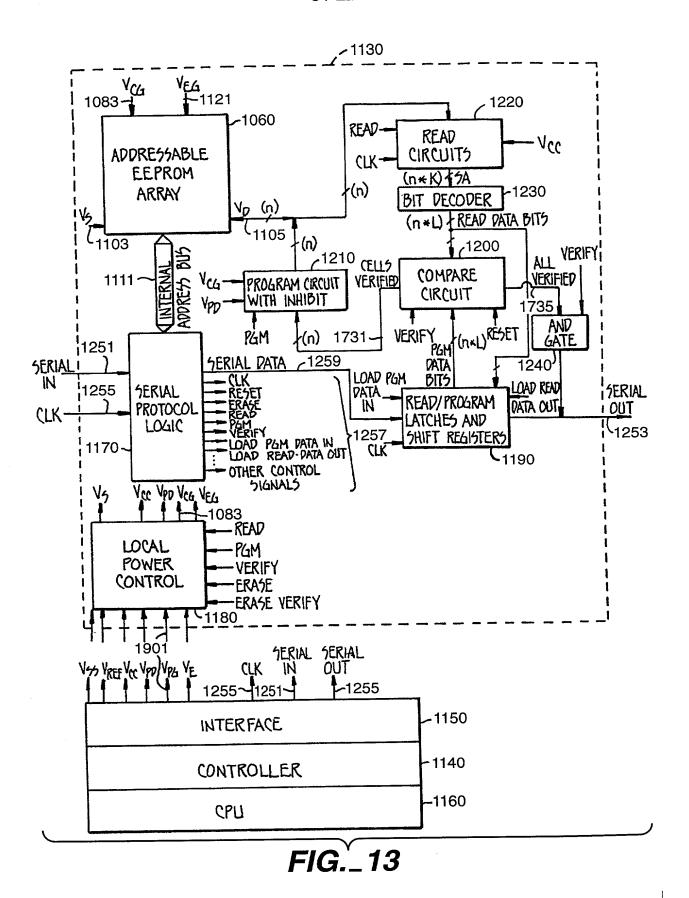
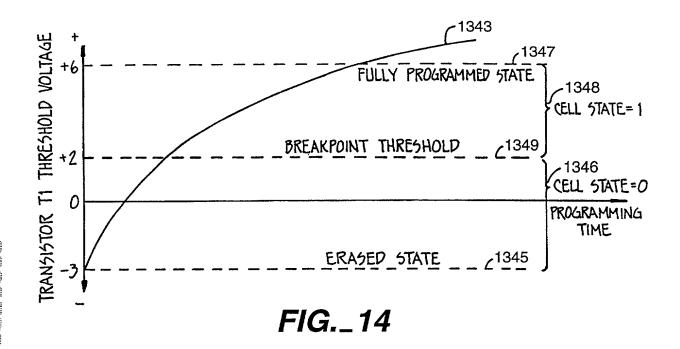


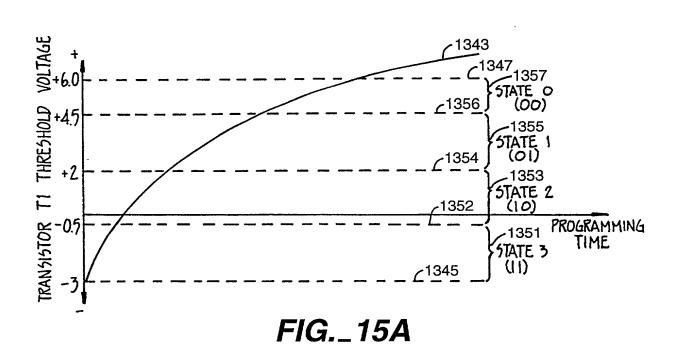
FIG.\_11

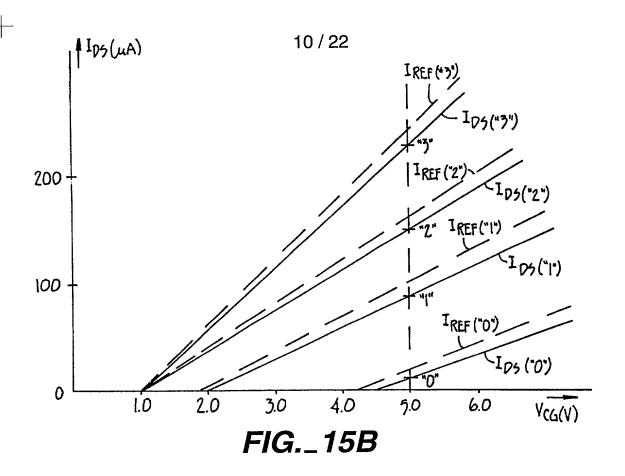
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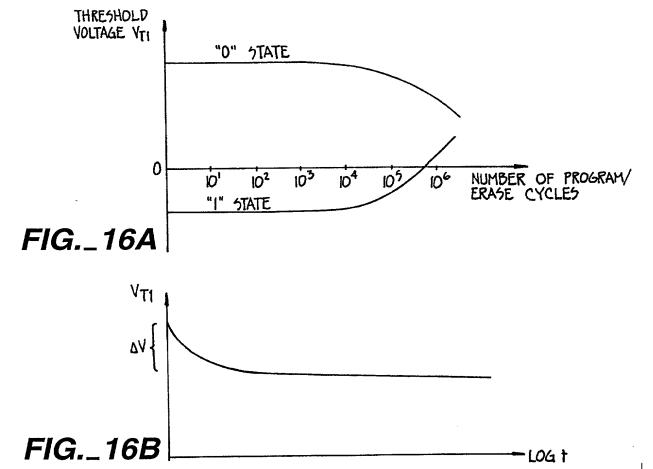


FIG.\_17A

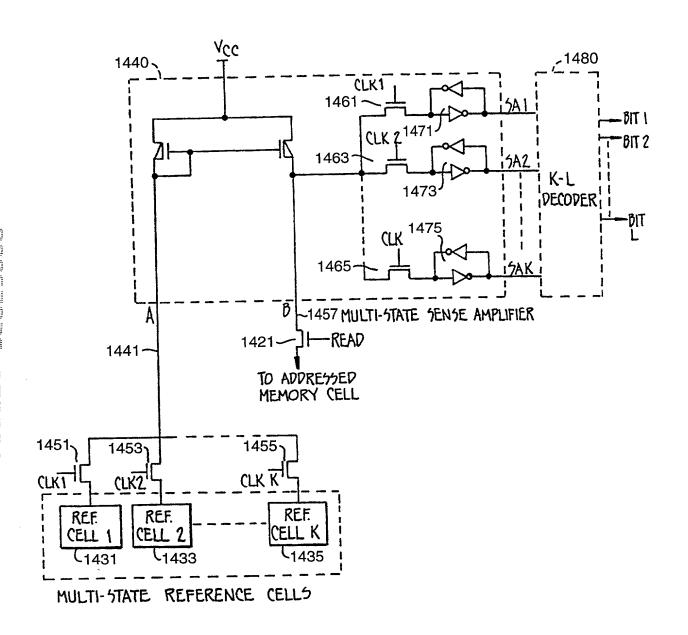
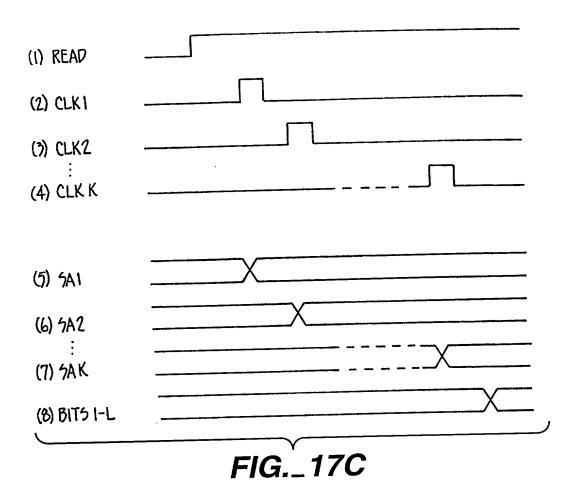


FIG.\_17B

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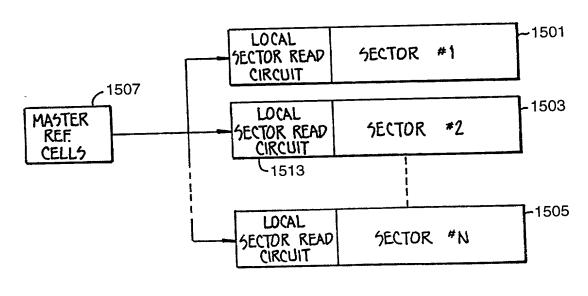


FIG.\_18

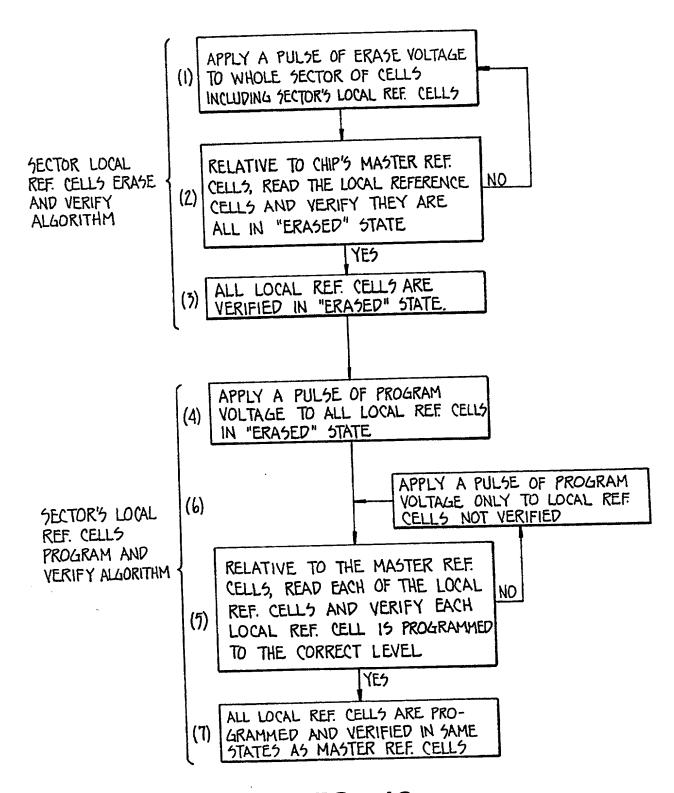
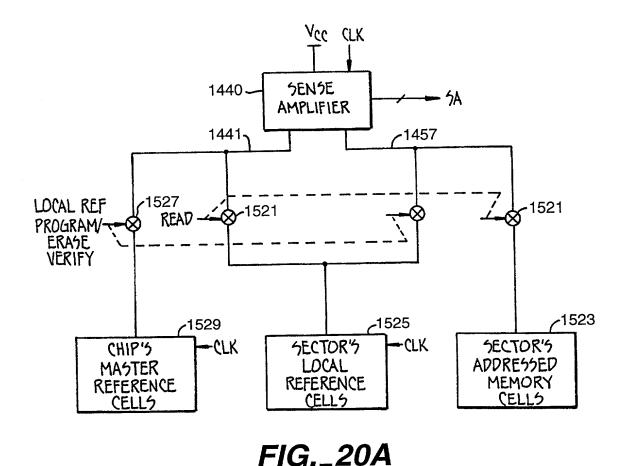


FIG.\_19

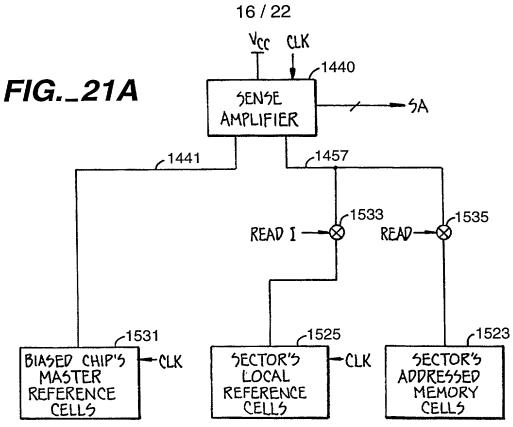
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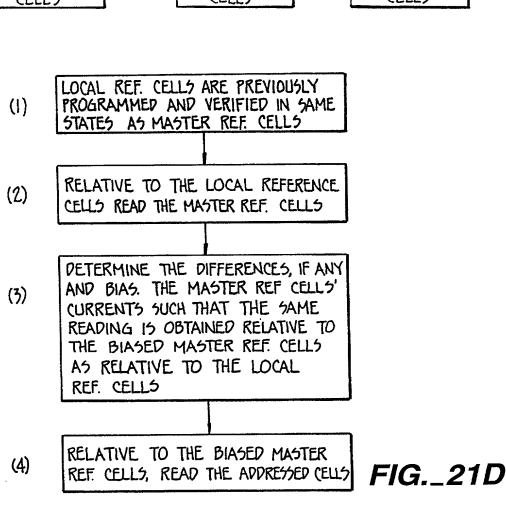


LOCAL REF. CELLS ARE PREVIOUSLY PROGRAMMED AND VERIFIED IN SAME STATES AS MASTER REF. CELLS RELATIVE. TO THE LOCAL REF. CELLS, READ THE ADDRESSED CELLS

**FIG.\_20B** 

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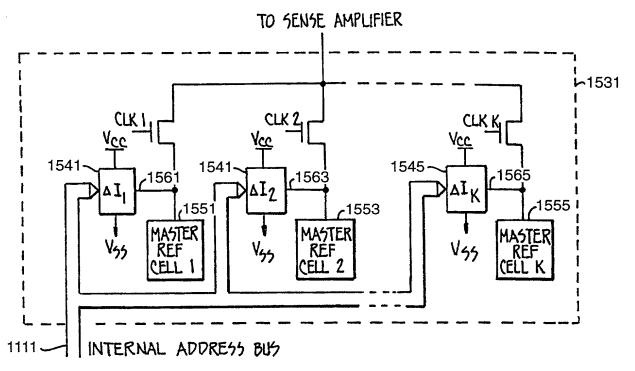
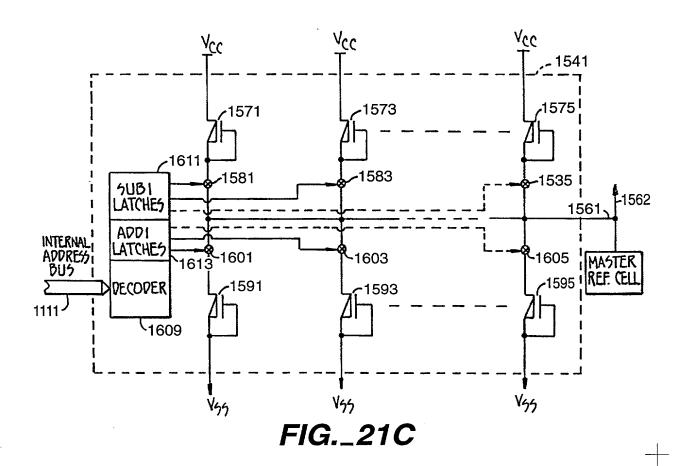
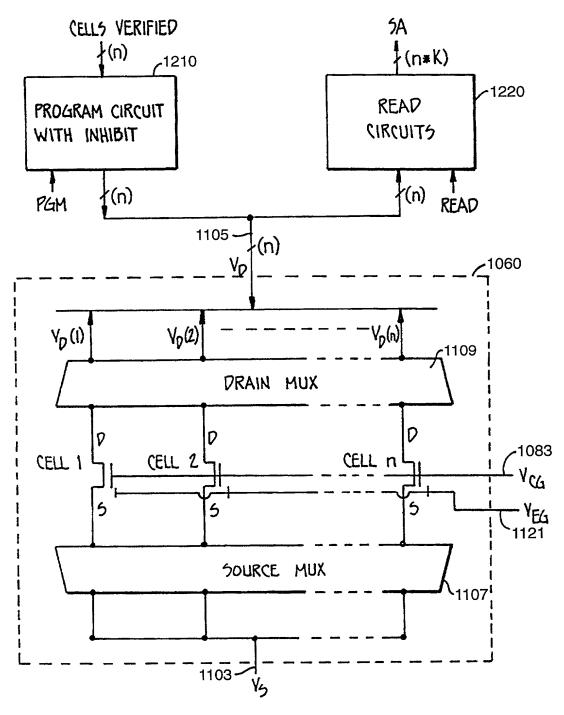


FIG.\_21B





READ/PROGRAM DATA PATHS FOR n CELLS IN PARALLEL

FIG.\_22

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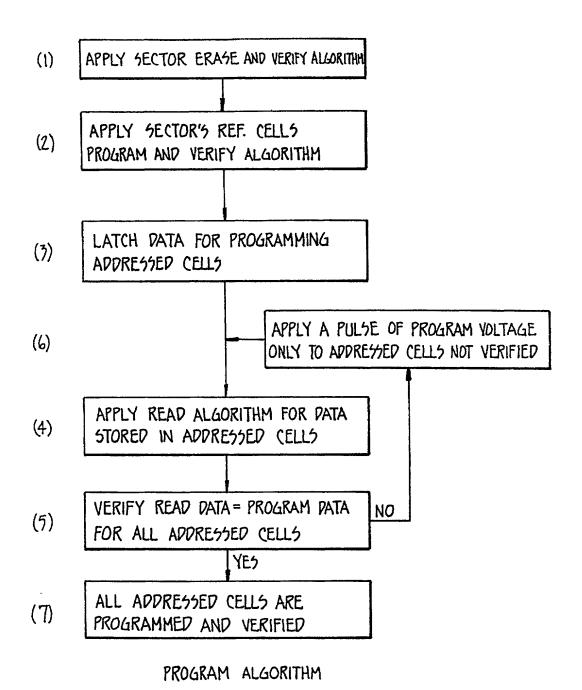


FIG.\_23

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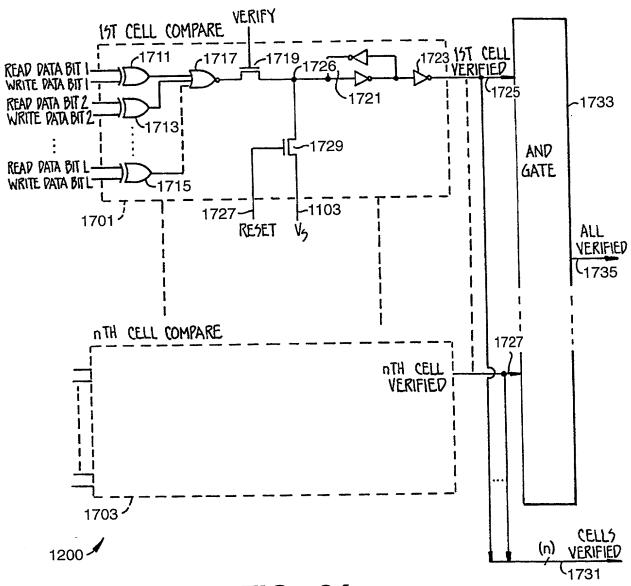


FIG.\_24

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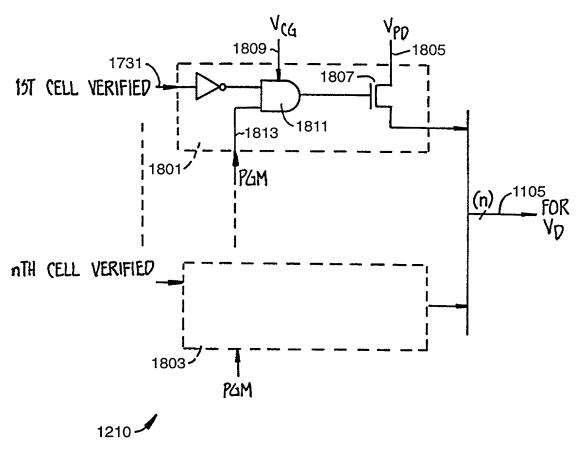


FIG.\_25

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	SELECTED CONTROL GATE V <sub>CG</sub>	DRAIN V <sub>D</sub>	50URCE V5	ERASE GATE V <sub>EG</sub>
READ	VPG	V <sub>REF</sub>	V <sub>55</sub>	٧ <sub>E</sub>
PROGRAM	VPG	V <sub>PP</sub>	V <sub>55</sub>	V <sub>E</sub>
PROGRAM VERIFY	VPG	V <sub>REF</sub>	V <sub>55</sub>	V <sub>E</sub>
ERA5E ERA5E VERIFY	V <sub>PG</sub>	V <sub>REF</sub> V <sub>REF</sub>	V <sub>55</sub> V <sub>55</sub>	V <sub>E</sub>

## TABLE 1

## FIG.\_26

(TYPICAL) VALUES)	READ	PROGRAM	PROGRAM VERIFY	ERA5E	ERASE VERIFY
VpG	Vcc	12V	V <sub>CC</sub> +&V	Vcc	V <sub>CC</sub> -SV
Vcc	54	57	5V	5V	<i>5</i> V
VPD	V55	87	8V	V55	V55
VE	V55	V55	V55	20V	V55
UNSELECTED CONTROL GATE	V55	V55	V55	V55	V55
UNSELECTED BIT LINE	V <sub>REF</sub>	V <sub>REF</sub>	V <sub>REF</sub>	V <sub>REF</sub>	V <sub>REF</sub>

 $V_{55} = 0V$ ,  $V_{REF} = 1.5V$ , SV = 0.5V - 1V

TABLE 2

FIG.\_27